



**STATE OF NEVADA**  
**Department of Administration**  
**Division of Human Resource Management**

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**CLASS SPECIFICATION**

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
<b>SCIENTIFIC GLASSBLOWER AND DESIGN SPECIALIST</b>	<b>35</b>	<b>C</b>	<b>6.380</b>

Under general direction, design and develop heat and chemical resistant laboratory glass and quartz apparatus for state-of-the-art scientific research and coordinate the design, manufacture, and/or purchase of scientific laboratory glassware apparatus for the University System.

Advise in the design and purchase of new scientific equipment by reviewing needs; determine options available; compute time, costs, and construction or procurement estimates; and make recommendations in order to provide information or solutions for the most cost effective and efficient means to meet research and instructional needs.

Develop specifications and fabricate new glass and quartz apparatus needed in research and instruction, such as test tubes, retorts, flasks, stills, condensers, and glass components by receiving sketches or requirements for specialized scientific apparatus; repair and modify glass and quartz apparatus to meet specific needs.

Design work plan; determine type of glass and equipment needed to complete project; heat glass until pliable; blow, shape and bend glass; join sections together using flaring, pressing and flattening tools, and stop cork; measure with micrometers, calipers and rulers; and test newly fabricated or repaired scientific glass apparatus to ensure quality and performance meet requirements and standards.

Convert pyrex and quartz tubings, stopcocks, and standard taper-ground joints by heating to required condition; manipulate with glassblowing lathe, torches, annealing oven, glassblowing cutters, and hand operated glass-forming tools; and test for compliance with specifications.

Instruct students in the fundamentals of glassblowing in the design and production of scientific glass apparatus.

Perform related duties as assigned.

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**MINIMUM QUALIFICATIONS**

**EDUCATION AND EXPERIENCE:** Completion of a glassblower apprenticeship program and two years of experience as a journey level glassblower in the fabrication of experimental and instructional glassware in a college or university setting; **OR** completion of a glassblower apprenticeship program and three years of full time experience as a journey level glassblower in a private or industrial glassblowing shop.

**ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES** (required at time of application):

**Detailed knowledge of:** available glass laboratory apparatus and alternative uses; university research laboratory glassware equipment; health and safety practices in glassblowing. **Working knowledge of:** laboratory glassware needs; equipment capable of producing glassware conforming to specific research needs; physical laws of glassblowing; high vacuum technology and silvering; chemical engineering principles and theories as applied to chemical reactions of glass and metal alloys used to join glassware to metal. **Ability to:** communicate effectively orally and in writing; develop innovative solutions to equipment design problems; seal glass to metal; discuss designs and apparatus requirements with faculty, engineers, graduate students, and vendor representatives; develop, produce, and test glassware designs; design simple and complex glass and

**MINIMUM QUALIFICATIONS (cont'd)****ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (cont'd)**

quartz apparatus from sketches or oral directions; shape and blow glass and quartz tubing, stopcocks and standard taper joints; weld glass and quartz tubing to join components of research and teaching apparatus; advise on problems and needs related to scientific glass and quartz apparatus; prepare time, cost, and construction or procurement estimates; instruct others in the fundamentals of scientific glassblowing; test completed apparatus for conformance to stress, pressure and temperature requirements; schedule and prioritize glassware production.

**FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):**

**Detailed knowledge of:** recordkeeping and inventory procedures; glass apparatus testing methods to ensure conformity to required specifications. **Working knowledge of:** glassware vendors; university purchasing procedures. **Ability to:** define problems, consider alternatives, and present solutions; design and develop complicated glassware such as ASTM distilling systems, fractionating columns, short-path and micro-apparatus, vacuum jacketed columns, sublimation apparatus, extraction apparatus, reaction and synthesis vessels, rotary evaporation, distillation apparatus and high vacuum systems.

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

6.380

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